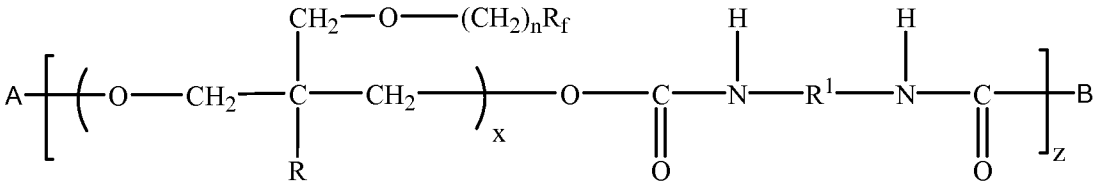
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-19 (canceled)

20 (previously submitted): A fluorinated thermoset polyurethane elastomer represented by the formula (I):



(I)

, comprising a polyether segment; a polyisocyanate unit covalently bonded to the polyether segment; and a cross-link formed from a cross-linking agent,

wherein:

n is from 1-3;

R is independently selected from the group consisting of methyl and ethyl;

R_f is independently selected from the group consisting of perfluorinated alkyls having from 1 to about 20 carbons and oxa-perfluorinated polyethers having from about 4 to about 20 carbons;

X is a variable integer from about 10 to about 250;

Z is a variable integer from 2 to about 50

R^1 is a divalent hydrocarbyl radical;

A is an end-group selected from the group consisting of H and an isocyanate fragment; and

B is an end-group selected from the group consisting of a fragment having an OH and an isocyanate fragment.

21 (previously submitted): The fluorinated thermoset polyurethane elastomer of claim 20, wherein the cross-linking agent is selected from the group consisting of a low molecular weight polyol and a low molecular weight polyamine.

22 (previously submitted): The fluorinated thermoset polyurethane elastomer of claim 20, wherein the crosslinking agent is selected from the group consisting of trimethylolpropane, pentaerythitol, trimethylolethane, triethanolamine, 1,4-butanediamine, xylene diamine, diethylenetriamine, methylene dianiline, diethanolamine and combinations thereof.

23 (previously submitted): The fluorinated thermoset polyurethane elastomer of claim 20, wherein the polyether segment is produced from at least one monomer selected from the group consisting of 3-(2,2,3,3,4,4,5-heptafluorobutoxymethyl)-3-methyloxetane; 3-(2,2,2-trifluoroethoxymethyl)-3-methyloxetane; 3-(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyloxymethyl)-3-methyloxetane; 3-(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorooctyloxymethyl)-3-methyloxetane; and 3-(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosa-fluorododecyloxymethyl)-3-methyloxetane.

24 (previously submitted): The fluorinated thermoset polyurethane elastomer of claim 20, wherein the polyisocyanate unit is produced from an isocyanate selected from the group consisting of hexamethylene diisocyanate (HDI), isophorone diisocyanate (IPDI), 4,4'-methylene diphenylisocyanate (MDI), polymeric MDI (Isonate®), toluene diisocyanates, saturated MDI (HMDI), polymeric HDI (Desmodur® N-100 and N-3200), trimethylhexane diisocyanate and combinations therof.

25 (previously submitted): A method of making a fluorinated thermoset polyurethane elastomer, comprising the steps of:

a) mixing a prepolymer with an isocyanate, a cross-linking agent, and a catalyst to form a reaction mixture, wherein the prepolymer is produced from a monomer

selected from the group consisting of FOX (fluorinated OXetane) and FOX/THF (tetrahydrofuran) ; and

b) curing the reaction mixture to form the thermoset polyurethane elastomer.

26 (previously submitted): The method of claim 25, further comprising the steps of casting the reaction mixture into a mold; and degassing the cast reaction mixture after step a).

27 (previously submitted): The method of claim 25, wherein the mixture is cured at a temperature between about 20°C to about 150°C.

28 (previously submitted): The method of claim 25, wherein the reaction mixture is heated to about 65 °C for about 3 to about 16 hours.

29 (previously submitted): The method of claim 25, wherein the isocyanate is selected from the group consisting of hexamethylene diisocyanate (HDI), isophorone diisocyanate (IPDI), 4,4'-methylene diphenylisocyanate (MDI), polymeric MDI (Isonate®), toluene diisocyanates, saturated MDI (HMDI), polymeric HDI (Desmodur® N-100 and N-3200), trimethylhexane diisocyanate and combinations thereof.

30 (previously submitted): The method of claim 25, wherein the cross-linking agent is selected from the group consisting of a low molecular weight polyol and a low molecular weight polyamine.

31 (previously submitted): The method of claim 25, wherein said crosslinking agent is selected from the group consisting of trimethylolpropane, pentaerythitol, trimethylolethane, triethanolamine, 1,4-butanediamine, xylene diamine, diethylenetriamine, methylene dianiline, diethanolamine and combinations thereof.

32 (previously submitted): The method of claim 25, wherein the catalyst is a member selected from the group consisting of dibutyltin dilaurate, triethyamine, triethylene

diamine, triphenyl bismuth, chromium acetylacetonate, lead octonate, ferric acetylacetonate, tin octanoate and combinations thereof.

33-41 (canceled)

34 (new): The fluorinated thermoset polyurethane elastomer of claim 21, wherein the crosslinking agent is a low molecular weight polyamine.

43 (new): The fluorinated thermoset polyurethane elastomer of claim 22, wherein the crosslinking agent is methylene dianiline.

44 (new): The fluorinated thermoset polyurethane elastomer of claim 22, wherein the crosslinking agent is trimethylolpropane.

45 (new): The fluorinated thermoset polyurethane elastomer of claim 24, wherein the isocyanate is selected from the group consisting of polymeric HDI (Desmodur® N-100) and polymeric HDI (Desmodur® N-3200).

46 (new): The fluorinated thermoset polyurethane elastomer of claim 24, wherein the isocyanate is isophorone diisocyanate (IPDI).

47 (new): The fluorinated thermoset polyurethane elastomer of claim 24, wherein the isocyanate is selected from the group consisting of saturated MDI (HMDI) and polymeric MDI (Isonate®).

48 (new): The method of claim 30, wherein the crosslinking agent is a low molecular weight polyamine.

49 (new): The method of claim 32, wherein the catalyst is dibutyltin dilaurate.